

APPLICANT(S): Sreekumaran et al.
SERIAL NO.: 10/586,603
FILED: July 20, 2006
Page 4

REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims 1-6 are pending. Claims 5-6 have been withdrawn from consideration. Claims 1-4 have been rejected. Claims 1 and 3-4 have been amended.

Support for the amendments of claim 1 are found, for example on page 4, lines 6-19 of the specification as filed, describing producing nanoparticles. Further, the use of sodium citrate, as recited in amended claim 1, is known in the art to produce non-ionic metal nanoparticles.

Claim 2 has been canceled without prejudice or disclaimer. In making this cancellation without prejudice, Applicants reserve all rights in this claim to file divisional and/or continuation patent applications.

Applicants respectfully assert that the amendments to the claims add no new matter.

35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 1 and 3 under 35 U.S.C. § 103(a), as being unpatentable over Heinig Jr. et al. (US pat. 6,758,345). The Examiner further rejected claims 1 and 3 under 35 U.S.C. § 103(a), as being unpatentable over Kamiya et al. (US Pat. 4,234,456). Finally, the Examiner rejected claims 1-4 under 35 U.S.C. § 103(a), as being unpatentable over Yan (US Pat. 5,322,628).

Applicants respectfully traverse the U.S.C. § 103(a) rejections of claims 1-4.

It is respectfully submitted that none of the cited documents teach or suggest:

adsorbent compositions for removing pesticides like chlorpyrifos, malathion and other organo halogen/sulphur pesticides comprising metallic gold/silver nanoparticles having a size which is not more than 150 nm deposited on activated alumina and/or magnesia, wherein said metallic gold/silver nanoparticles are prepared by

- (a) diluting silver nitrate or $\text{HAuCl}_4 \cdot 3\text{H}_2\text{O}$ in water;
- (b) heating;
- (c) adding a sodium citrate solution;
- (d) heating; and
- (e) loading silver and gold nanoparticles on activated alumina and/or magnesia.

as recited in amended claim 1. (emphasis added)

As detailed in the August 4, 2009 Response to Office Action, all three cited documents relate to metal ions or colloids formed from metal ions, whereas, according to amended claim 1, the claimed composition comprises metallic nanoparticles which are by definition non-ionic because metallic nanoparticles do not have an electronic charge.

Furthermore, according to amended claim 1, the non-ionic gold/silver particles are prepared by the process recited in amended claim 1. It is respectfully asserted that none of the prior art documents disclose such a process for the preparation of the metals used therein, and therefore, none make obvious amended claim 1.

Specifically, Heinig Jr. et al. discloses the depositing of silver ions on a substrate, such as alumina or activated charcoal (see, e.g., column 3, lines 29-48). Further, the process for preparing the compositions disclosed by Heinig Jr. et al., includes heating the alumina substrate to 300-375°F (column 6, lines 6-9) and then depositing the silver ions on the substrate by any known method, e.g., via reducing silver containing salts (column 6, lines 32-36). In contrast, the composition according to amended claim 1 is prepared by a process that does not include heating the alumina, and further, does not include the use of ions; rather, of non-ionic nanoparticles. Thus, it is respectfully submitted that Heinig Jr. et al. does not teach or suggest claim 1, as amended.

Kamiya et al. discloses a method by which silver is supported on alumina by placing the alumina in nitric acid, retaining at room temperature for 15 minutes, filtering, mixing with silver nitrate and water and drying at about 100°C (column 3, lines 14-20 and column 4, lines 60-64). In contrast, the composition claimed in amended claim 1 does not include any of the

APPLICANT(S): Sreekumaran et al.
SERIAL NO.: 10/586,603
FILED: July 20, 2006
Page 6

steps disclosed by Kamiya et al. Therefore, it is respectfully submitted that Kamiya et al. does not teach or suggest claim 1, as amended.

Yan discloses several methods by which the silver/gold particles may be incorporated onto the supporting substrate, which, according to Yan is preferably zeolite. One method disclosed by Yan is ion exchange, wherein the metal ions are possibly reduced to their elements after they are incorporated on the zeolite (column 5, line 66 to column 6, line 36). Another method is milling the zeolite with Ag_2O , or other compounds that can be converted into elemental silver. The milled zeolite is then extruded, dried, optionally calcinated and reduced to convert the silver compound to elemental silver (column 6, lines 37-42). A third method disclosed by Yan is the impregnation of the zeolite with a silver/gold salt solution that decomposes to elemental silver/gold upon heating (column 6, lines 43-57).

None of the above methods of Yan is included in claim 1, as amended. According to amended claim 1, the non-ionic silver/gold particles are prepared and only then loaded onto the supporting substrate. In contrast, in Yan, various ions or compounds are loaded onto the supporting zeolite, and only then decomposed to elemental silver/gold. Further, none of the other steps found in any of the methods disclosed by Yan, e.g., milling, extruding etc., makes obvious amended claim 1. Therefore, it is respectfully submitted that Yan does not teach or suggest claim 1, as amended.

Accordingly, Applicants respectfully assert that amended independent claim 1 is allowable. Claims 3-4 depend from, directly or indirectly, claim 1, and therefore include all the limitations of that claim. Therefore, Applicants respectfully assert that claims 3-4 are likewise allowable.

Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1-4.

Conclusion

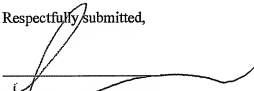
In view of the foregoing amendments and remarks, Applicants assert that the pending claims are allowable. Their favorable reconsideration and allowance is respectfully requested.

APPLICANT(S): Sreekumaran et al.
SERIAL NO.: 10/586,603
FILED: July 20, 2006
Page 7

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,



Attorney/Agent for Applicant(s)
Registration No.

Dated: December 23, 2009

Pearl Cohen Zedek Latzer, LLP
1500 Broadway, 12th Floor
New York, New York 10036
Tel: (646) 878-0800
Fax: (646) 878-0801